AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions or listings of claims for this application.

Listing of Claims:

Claims 1-6 (Canceled).

7. (Currently amended) A display apparatus comprises:

pixel electrodes arranged like a matrix;

display elements which operate according to the voltage of the pixel electrode;

an X driver for supplying an X signal to X signal line arranged in the column direction;

an Y driver for supplying an Y signal to Y signal line arranged in the row direction;

a liquid crystal drive voltage supplying circuit for supplying a liquid crystal drive voltage to a liquid crystal drive voltage line arranged in a column direction;

an XY calculating circuit provided at the intersection parts of the X signal line and the Y signal line and connected to the X signal line and the Y signal line for calculating and outputting the X and Y signals;

a signal comparator for comparing an output of the XY calculating circuit with a reference voltage and outputting a first voltage when the output of the XY calculating circuit is higher than the reference voltage, and a second voltage when lower than that;

a switch for controlling the connection of the pixel electrode and the liquid crystal drive voltage line, based on the output of the signal comparator;

n-gradation approximation calculating circuit for dividing the pixels into pixel blocks of N rows × N' columns, and converting the gradation level of each pixel of each

block into n-gradation approximation picture signal approximated to n values less than N × N', and

a signal control circuit for controlling the X driver, the Y driver, and liquid crystal drive voltage supplying circuit, according to the n-gradation approximation picture signal, ~~The display apparatus according to claim 6,~~ wherein n is two, the XY calculating circuit comprises two capacitors connected in series between the X signal line and the Y signal line, wherein the voltage of the connection node of two capacitors is input to the signal comparator as an output value, wherein the voltage VYMAX applied to Y signal line is a high voltage enough to allow the output of the XY arithmetic circuit to be higher than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, wherein the voltage VYMIN applied to Y signal line is a high voltage enough to allow the output of the XY arithmetic circuit to be lower than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, wherein VYMAX is applied to Y signal lines of the first to N-th rows, and VYMIN is applied to Y signal lines other than the first to Nth row, for the first selection period, wherein the voltages VY1<VY2<...<VYN are applied to Y signal lines of the 1st to N-th rows, VYMAX is applied to Y signal lines of the (N+1)-th to 2N-th rows, and VYMIN is applied to Y signal lines other than the first to 2Nth rows, for the second selection period, and wherein, for the i-th selection period, the voltages VY1<VY2<...<VYN are applied to Y signal lines of the ((i-2)×N+1)-th to ((i-1)×N)-th rows, VYMAX is applied to Y signal lines of the ((i-1)×N+1)-th to (i ×N)-th rows, and VYMIN is applied to Y signal lines other than the ((i-2)×N+1)-th to (i×N)-th rows.

8. (Currently amended) A display method in which a display signal for displaying a picture is independently applied to each of the pixels arranged like a matrix by using the wiring arranged in the directions of row and column, comprising the steps of:

dividing the pixels into pixel blocks of N rows × N' columns, and

allocating the gradation of n values which are less number than N × N' of the pixels of a pixel block formed from N × N' pixels, wherein, during a predetermined period of time, pixels of a first pixel block of the divided pixel blocks are allocated a first of the n gradations and are given a first signal and pixels of a second pixel block, adjacent to the first pixel block, of the pixel blocks are allocated a second of the n gradations and are given a second signal, ~~The display method according to claim 4,~~ wherein n is two, the XY calculating circuit comprises a capacitor of which one terminal is connected to the Y signal line and the other terminal to a drain electrode, and a transistor of which a source electrode is connected to the X signal line;

wherein the voltage of the drain electrode of the transistor is input to the signal comparator as an output value, voltage VYMAX applied to Y signal line is a high voltage enough to allow the output of the XY arithmetic circuit to be higher than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, voltage VYMIN applied to Y signal line is a high voltage enough to allow the output of the XY arithmetic circuit to be lower than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, voltage VYMAX is applied to Y signal lines of the 1st to N-th rows, and VYMIN is applied to Y signal lines other than the first to N-th row, for the first selection period, the voltages VY1<VY2<...<VYN are applied to Y signal lines of the first to N-th rows, VYMAX is applied to Y signal lines of the (N+1)-th to 2N-th rows, and VYMIN is applied to Y signal lines other than the first to 2N-th rows, for the second selection period, and wherein, for the i-th selection period, the voltages VY1<VY2<...<VYN are applied to Y signal lines of the ((i-2)×N+1)-th to ((i-1)×N)-th rows, VYMAX is applied to Y signal line of the ((i-1)×N+1)th to (i×N)th rows, and VYMIN is applied to Y signal lines other than the ((i-2)×N+1)-th to (i×N)-th rows.

9. (Currently amended) A display apparatus comprises:

pixel electrodes arranged like a matrix;

display elements which operate according to the voltage of the pixel electrode;

an X driver for supplying an X signal to X signal line arranged in the column direction;

an Y driver for supplying an Y signal to Y signal line arranged in the row direction;

a liquid crystal drive voltage supplying circuit for supplying a liquid crystal drive voltage to a liquid crystal drive voltage line arranged in a column direction;

an XY calculating circuit provided at the intersection parts of the X signal line and the Y signal line and connected to the X signal line and the Y signal line for calculating and outputting the X and Y signals;

a signal comparator for comparing an output of the XY calculating circuit with a reference voltage and outputting a first voltage when the output of the XY calculating circuit is higher than the reference voltage, and a second voltage when lower than that;

a switch for controlling the connection of the pixel electrode and the liquid crystal drive voltage line, based on the output of the signal comparator;

n-gradation approximation calculating circuit for dividing the pixels into pixel blocks of N rows × N' columns, and converting the gradation level of each pixel of each block into n-gradation approximation picture signal approximated to n values less than N × N', and

a signal control circuit for controlling the X driver, the Y driver, and liquid crystal drive voltage supplying circuit, according to the n-gradation approximation picture signal, ~~The display apparatus according to claim 6,~~ wherein n is two, the XY calculating circuit may comprise a capacitor of which one terminal is connected to the Y signal line and the other terminal to a drain electrode, and a transistor of which a source electrode is connected to the X signal line like the above-mentioned circuit, wherein the voltage of the drain electrode of the transistor is input to the signal comparator as an output value, wherein the voltage VYMAX applied to Y signal line is a high voltage enough to allow the

output of the XY arithmetic circuit to be higher than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, voltage VYMIN applied to Y signal line is a high voltage enough to allow the output of the XY arithmetic circuit to be lower than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, wherein VYMAX is applied to Y signal lines of the first to N-th rows, and VYMIN is applied to Y signal lines other than the first to N-th rows, for the first selection period, wherein the voltages VY1<VY2<...<VYN are next applied to Y signal lines of the first to N-th rows, and VYMIN is applied to Y signal lines other than the first to N-th rows, for the second selection period, and wherein, for the (2×i-1)-th selection period (i=1,2,3,··), VYMAX is applied to Y signal lines of the ((i-1)×N+1)-th to (i×N)-th rows, and VYMIN is applied to Y signal lines other than the ((i-1)×N+1)-th to (i×N)-th rows, wherein for the (2×i)-th selection period, the voltage VY1<VY2<...<VYN are applied to Y signal lines of the ((i-1)×N+1)-th to (i×N)-th rows, and VYMIN is applied to Y signal lines other than the ((i-1)×N+1) to (i×N)-th rows.

10. (Currently amended) A display apparatus comprises:

pixel electrodes arranged like a matrix;

display elements which operate according to the voltage of the pixel electrode;

an X driver for supplying an X signal to X signal line arranged in the column direction;

an Y driver for supplying an Y signal to Y signal line arranged in the row direction;

a liquid crystal drive voltage supplying circuit for supplying a liquid crystal drive voltage to a liquid crystal drive voltage line arranged in a column direction;

an XY calculating circuit provided at the intersection parts of the X signal line and the Y signal line and connected to the X signal line and the Y signal line for calculating and outputting the X and Y signals;

a signal comparator for comparing an output of the XY calculating circuit with a reference voltage and outputting a first voltage when the output of the XY calculating circuit is higher than the reference voltage, and a second voltage when lower than that;

a switch for controlling the connection of the pixel electrode and the liquid crystal drive voltage line, based on the output of the signal comparator;

n-gradation approximation calculating circuit for dividing the pixels into pixel blocks of N rows × N' columns, and converting the gradation level of each pixel of each block into n-gradation approximation picture signal approximated to n values less than N × N', and

a signal control circuit for controlling the X driver, the Y driver, and liquid crystal drive voltage supplying circuit, according to the n-gradation approximation picture signal, ~~The display apparatus according to claim 6,~~ wherein in each of N' columns in i=1, 2, ··· 3 in such a display apparatus, wherein the liquid crystal drive voltage lines of the ((2×i-2)×N+1)-th to ((2×i-1)×N)-th rows are connected to one another, the liquid crystal drive voltage lines of the ((2×i-1)×N+1)-th to (2×i×N)-th rows is connected to one another, and the liquid crystal drive voltage lines of the ((2×i-2)×N+1)-th to ((2×i-1)×N)-th rows and the liquid crystal drive voltage lines of the ((2×i-1)×N+1)-th to (2×i×N)-th rows are not connected to one another.

11. (Currently amended) A display apparatus comprises:

pixel electrodes arranged like a matrix;

display elements which operate according to the voltage of the pixel electrode;

an X driver for supplying an X signal to X signal line arranged in the column direction;

an Y driver for supplying an Y signal to Y signal line arranged in the row direction;

a liquid crystal drive voltage supplying circuit for supplying a liquid crystal drive voltage to a liquid crystal drive voltage line arranged in a column direction;

an XY calculating circuit provided at the intersection parts of the X signal line and the Y signal line and connected to the X signal line and the Y signal line for calculating and outputting the X and Y signals;

a signal comparator for comparing an output of the XY calculating circuit with a reference voltage and outputting a first voltage when the output of the XY calculating circuit is higher than the reference voltage, and a second voltage when lower than that;

a switch for controlling the connection of the pixel electrode and the liquid crystal drive voltage line, based on the output of the signal comparator;

n-gradation approximation calculating circuit for dividing the pixels into pixel blocks of N rows × N' columns, and converting the gradation level of each pixel of each block into n-gradation approximation picture signal approximated to n values less than N × N', and

a signal control circuit for controlling the X driver, the Y driver, and liquid crystal drive voltage supplying circuit, according to the n-gradation approximation picture signal, ~~The display apparatus according to claim 6,~~ wherein n is two, and the XY calculating circuit comprises a capacitor of which one terminal is connected to the Y signal line and the other terminal to a drain electrode, and a transistor of which a source electrode is connected to the X signal line, wherein the voltage of the drain electrode of the transistor is input to the signal comparator as an output value, VYMAX and VYMID applied to Y signal line are set to a high voltage enough to allow the value of VX + VYMAX + VMID to be higher than the reference voltage of the signal comparator regardless of the value of the voltage VX applied to X signal line, VYMIN applied to Y signal line is set to a high voltage enough to allow the output of the XY ~~arithmatic~~ arithmetic circuit to be lower than the reference voltage of the signal comparator regardless of the voltage applied to X signal line, wherein for the first selection period, VYMID is applied to Y signal lines of the first to N-th

rows, VYMIN is applied to Y signal lines other than the first to N-th rows, wherein for the second selection period, VYMAX is applied to Y signal lines of the first to N-th rows, wherein VYMID is applied to Y signal lines other than the (N+1)-th to 2N-th rows, VYMIN is applied to Y signal lines other than the first to 2N-th rows, wherein for the third selection period, the voltages VY1<VY2<...<VYN are applied to Y signal lines of the first to N-th rows, VYMAX is applied to Y signal lines of the (N+1)-th to 2N-th rows, wherein VYMID is applied to Y signal lines of the (2N+1)-th to 3N-th rows, and VYMIN is applied to Y signal lines other than the first to 3N-th rows, and wherein for the i-th selection period, the voltages VY1<VY2<...<VYN are applied to Y signal lines of the ((i-1)×N+1)-th to ((i-2)×N)-th rows, VYMAX is applied to Y signal lines of the ((i-2)×N+1)-th to ((i-1)×N)-th rows, VYMID is applied to Y signal lines of the ((i-1) ×N+1)-th to (i×N)-th rows, and VYMIN is applied to Y signal lines other than the ((i-3)×N+1)-th to (i×N)-th rows.

Claims 12-18 (Canceled).